IN THE CLAIMS

1. (Currently amended) A method of analyzing the performance of a modem connection, comprising:

connecting a line interface to a communication link carrying signals of a modem connection, between a pair of end modems;

collecting signals passing on the communication link, between the end modems, through the line interface;

determining, by a processor, an information content of one or more signals transmitted between the end modems ~~determining quality or transmission characteristics regarding the modem connection,~~ responsive to signals collected through the line interface; and

displaying information on the modem connection, responsive to the determined information content~~determined characteristics~~.

2. (Original) A method according to claim 1, wherein the modem connection comprises a full-duplex modem connection.

3. (Previously presented) A method according to claim 1, wherein the modem connection comprises an ADSL modem connection.

4. (Previously presented) A method according to claim 1, wherein connecting the line interface to the communication line comprises connecting at a point at least two times closer to one of the modems than the other modem.

5. (Previously presented) A method according to claim 1, wherein connecting the line interface to the communication line comprises connecting at a point at most two times closer to one of the modems than to the other modem.

6. (Previously presented) A method according to claim 1, wherein collecting signals passing on the communication link comprises collecting without sending to either of the modems acknowledgment signals or any other modem tangible signals.

7. (Currently amended) A method according to claim 1, wherein displaying information on the ~~determined characteristics~~modem connection comprises displaying the contents of one or more modem negotiation signals.

8. (Currently amended) A method according to claim 1, wherein displaying information on the ~~determined characteristics~~modem connection comprises providing information on noise levels on the connection.

9. (Currently Amended) A method according to claim 8, wherein providing information on noise levels on the connection comprises suggesting, by the processor, possible sources of the noise.

10. (Currently Amended) A method according to claim 8, wherein displaying information on the ~~determined characteristics~~modem connection comprises matching by the processor, between ~~providing information on~~ effects in upper ~~physical~~ layers ~~caused by the~~and noise levels on the connection at specific times.

11. (Currently Amended) A method according to claim 1, comprising determining~~wherein displaying information on the determined characteristics comprises providing~~, by the processor, information on the symbol mapping used by the connection, responsive to the collected signals.

12. (Currently amended) A method according to claim 1, wherein displaying information on the ~~determined characteristics~~modem connection comprises displaying information on signaling signals transmitted in parallel to data transmission.

13. (Currently Amended) A method according to claim 1, comprising performing signal tests on test signals collected through the line interface ~~transmitted on the connection~~ and comparing the results of the tests to negotiation signals, collected through the line interface, reporting test results from one of the modems.

14. (Currently Amended) A method according to claim 1, comprising injecting ~~by the performance analyzer~~through the line interface noise which forces a retrain of the modem connection.

15. (Original) A method according to claim 14, wherein injecting the noise comprises injecting noise in a manner which does not substantially interfere with a different connection passing on the communication link.

16. (Previously presented) A method according to claim 14, wherein injecting the noise comprises connecting a low impedance circuit, for at least some of the frequency bands carrying signals, to the communication link.

17. (Previously presented) A method according to claim 14, wherein the modem connection comprises a DSL connection.

18. (Original) A method according to claim 17, wherein the injected noise does not interfere with voice frequency bands of the communication link.

19. (Previously presented) A method according to claim 1, wherein the modem connection comprises a voice band modem connection.

20. (Currently Amended) A method according to claim 1, comprising identifying changes in the operation of the modem connection responsive to signals collected through the line interface and providing suggested causes of the changes.

21. (Original) A method according to claim 20, wherein identifying changes comprises identifying a retrain.

22. (Previously presented) A method according to claim 20, wherein identifying changes comprises identifying a bit swap.

23. (Previously presented) A method according to claim 20, wherein providing suggested causes of the changes comprises identifying, for at least one change, a noise that caused the change.

24. (Previously presented) A method according to claim 1, comprising identifying data retransmissions and providing suggested causes of the data retransmissions.

25. (Previously presented) A method according to claim 1, wherein displaying information on the determined characteristics comprises displaying a raw bit content of signals transmitted on the modem connection.

26. (Currently Amended) A method of analyzing the performance of a modem connection~~according to claim 1, wherein~~ comprising:

connecting a line interface to a communication link carrying signals of a modem connection, between a pair of end modems;

collecting signals passing on the communication link, between the end modems, through the line interface;

analyzing the collected signals; and

~~displaying information on the determined characteristics comprises~~ providing a warning on a possible tapping of the communication link, responsive to the analysis.

27. (Currently Amended) A method according to claim 1, comprising extracting the data transmitted on the modem connection, from the signals collected through the line interface.

28. (Currently amended) A modem connection performance analyzer, comprising:

a line interface adapted to collect signals of a modem connection passing on a communication link, between two end modems connected to the link;

a processor adapted to determine an information content of one or more ~~quality or transmission characteristics regarding~~signals passing on the modem connection, responsive to the collected signals; and

a human interface adapted to provide information on the determined ~~characteristics~~information content.

29. (Original) A performance analyzer according to claim 28, comprising a low impedance shorting circuit adapted to short at least some of the frequencies of the communication link, responsive to a command from the processor.

30. (Currently amended) A method of monitoring an xDSL modem connection, comprising:

connecting a line interface to a communication link carrying signals of an xDSL modem connection, between a pair of end modems separate from the line interface;

collecting signals passing between the end modems on the communication link, through the line interface, by a performance analyzer, during a collection session in which signals are not injected by the performance analyzer onto the communication link, except possibly noise adapted to cause a retrain, injected at specific times; and

providing information on the modem connection, responsive to the collected signals.

31. (Original) A method according to claim 30, wherein providing information on the modem connection comprises providing information on the operation of the connection.

32. (Currently Amended) A method according to claim 310, wherein providing information on the operation of the modem connection comprises providing data passing on the connection.

33. (Original) A method of forcing a retrain on a modem connection, comprising:

determining at least one first frequency band to be disrupted; and

connecting to a communication line carrying the modem connection, between two end modems, a circuit which disrupts transmission of signals on the at least one first frequency band.

34. (Original) A method according to claim 33, wherein determining the at least one first frequency band to be disrupted comprises determining a frequency band including a pilot tone frequency band of the modem connection.

35. (Original) A method according to claim 33, wherein the circuit disrupts the first frequency band substantially without interfering with signals of a second frequency band.

36. (Original) A method according to claim 35, wherein the second frequency band comprises a frequency band of voice signals.

37. (Original) A method according to claim 35, wherein connecting the disruption circuit comprises connecting a circuit which shorts the at least one first frequency band without shorting the second frequency band.

38. (Original) A method according to claim 33, wherein connecting the disruption circuit comprises connecting a circuit which injects noise at the at least one first frequency band.

39. (New) A method according to claim 1, wherein determining the information content of the one or more signals comprises determining a bit content.

40. (New) A method according to claim 1, comprising determining a stage of the modem connection, responsive to the collected signals.

41. (New) A method according to claim 1, wherein the only modem tangible signals transmitted on the connection during the collection of the signals through the line interface are generated by the end modems.

42. (New) A method according to claim 1, wherein at least some of the signals collected through the line interface are generated without relation to the collection of the signals to the line interface.

43. (New) A method according to claim 1, wherein the processor is not connected to the end modems other than through the line interface.

44. (New) A method according to claim 1, wherein collecting signals passing on the communication link comprises collecting during a collection session in which signals are not injected through the line interface onto the communication link, except possibly noise adapted to cause a retrain, injected at specific times.